Appl. No. 515638 – New APC System - Caustic Scrubbers (Process 1, System 9)

Equipment	ID No.	Connected to	RECLAIM Source Type/ Monitoring Unit	Emission and Requirements	Conditions
Process 1: CHEMICAL MANUFACTURING, INORGANIC CHEMICAL					
System 1: SULFURIC ACID PLANT NO. 4					S13.1, S42.1, S42.2
FURNACE, WITH TWO LOW NOX BURNERS, FUEL OIL, NATURAL GAS, 2 SULFUR, 13 ACID BURNERS, 1 NOZZLE FOR VENT GAS FROM THE SPENT H2SO4 TANKS, WITH A/N: 474589 BURNER, FUEL OIL, NATURAL GAS, JOHN ZINK, TWO LOW NOX BURNERS, 75 MMBTU/HR EACH	D1	D18 D19 D20 D21 D86 D87 D88 D89 D90 D91 D115 D116 C124	NOX: MAJOR SOURCE**; SOX: MAJOR SOURCE **	**CO**: 2000 PPMV (5) [**RULE 407, 4-2-1982**] **H2SO4 MIST**: 0.15 LBS/TON PRODUCED (8A) [**40CFR 60 Subpart H, 10-17-2000; CONSENT DECREE CIVIL NO. 2:07CV134WL,7-23-2007**]; **H2SO4 MIST**: 0.3 LBS/TON PRODUCED (5) [**RULE 469, 5-7-1976**; RULE 469, 2-13-1981]; **H2SO4 MIST**: 10 PERCENT OPACITY (8B) [**40CFR 60 Subpart H, 10-17-2000]**: **PM**: (9) [**RULE 404, 2-7-1986**];**PM**:0.1 GRAINS/SCF (5) [**RULE 2011, 5-6-2005; RULE 409, 8-7-1981**]; **SO2**: 3.5 LBS/TON PRODUCED (5) [**CONSENT DECREE CIVIL NO. 2:07CV134WL,7-23-2007**] **SO2**: 4 LBS/TON PRODUCED (8A) [**40CFR 60 Subpart H, 10-17-2000**]	D82.1, D323.1
BOILER, WASTE HEAT AND 12 SOOT BLOWERS A/N: 474589	D2				
TOWER, GAS QUENCH A/N: 474589	D3				
COLUMN, STRIPPER, QUENCH ACID A/N: 474589	D6				
TOWER, GAS COOLING, PACKED TYPE A/N: 474589	D4				
COLUMN, STRIPPER, EFFLUENT WATER A/N: 474589	D5				
ELECTROSTATIC PRECIPITATOR, IN SERIES WITH DEVICE NO 8 A/N: 474589	D7	D8			
ELECTROSTATIC PRECIPITATOR, IN SERIES WITH DEVICE NO 7, COMBINED LOAD 160 KW A/N: 474589	D8	D7			

ABSORBER, DRYING, PACKED TYPE, WITH INTERNAL MIST ELIMINATOR A/N: 474589	D10	***C149***			
COMPRESSOR, MAIN PROCESS, CENTRIFUGAL A/N: 474589	D9				D82.2
REACTOR, CATALYTIC CONVERTER, HEIGHT: 66 FT; DIAMETER: 32 FT 6 IN A/N: 474589	D15				
ABSORBER, INTERMEDIATE, PACKED TYPE WITH INTERNAL MIST ELIMINATOR A/N: 474589	D11				
COLUMN, STRIPPER, PACKED TYPE, PRODUCT ACID A/N: 474589	D14				
ABSORBER, FINAL, PACKED TYPE, WITH INTERNAL MIST ELIMINATOR A/N: 474589	D13	***C148***			
~~**STACK, HEIGHT: 215 FT; DIAMETER: 6 FT**~~ ~~**A/N: 474589**~~	~~**S17**~~				~~**D82.3**~~
COOLING TOWER, WATER A/N: 474589	D16				
PIT, SULFUR, WIDTH: 24 FT; DEPTH: 6 FT 6 IN; LENGTH: 26 FT A/N: 474589	D130				
System 9: AIR POLLUTION CONTROL SYSTEM (NEW)					
SCRUBBER, SO2 SCRUBBER, 2 PACKED BEDS TOTAL, FIBER REINFORCED PLASTIC VESSEL, WITH MIST ELIMINATOR, HEIGHT: 61 FT; DIAMETER: 15 FT ***A/N: 515638***	***C148 (NEW)***	***D13***			***H23.2***
STACK, 130 FT ABOVE GRADE, 6 FT DIAMETER, ***A/N: 515638***	***S151 (NEW)***				***D82.3***
SCRUBBER, PACKED BED, ACIDULATION STRIPPER, FIBER REINFORCED PLASTIC VESSEL, HEIGHT: 43 FT; DIAMETER: 3 FT 8 IN ***A/N: 515638***	***C149 (NEW)***	***D10***			***C8.7, C12.1, D12.3, E57.3***
TANK, CAUSTIC SOLUTION, ELECTRICALLY HEATED, 7000 GALS; DIAMETER: 10FT; HEIGHT: 12 FT ***A/N: 515638***	***C150 (NEW)***				

PERMIT CONDITIONS

C8.7 The operator shall use this equipment in such a manner that the flow rate being monitored, as indicated below, is not less than 40 gpm.

To comply with this condition, the operator shall monitor the flow rate as specified in condition number 12-3.

*[**RULE 2005, 5-6-2005; RULE 2011, 5-6-2005**]*

[Devices subject to this condition: C149]

C12.1 The operator shall use this equipment in such a manner that the liquid to gas ratio being monitored, as indicated below, is less than or equal to 0.07 gpm/cfm.

The operator shall install and maintain a liquid flow meter and a gas meter to accurately measure and record the:
1) total liquid flow in the stripper, in gallons per minute
2) gas flow rate at stripper gas inlet, in cubic feet per minute
(each recorded as 3-hour arithmetic average). In addition, the operator shall keep records, in manner approved by the District, for each of these parameters.

This maximum liquid to gas ratio shall not apply to periods of start-up or shutdown of the sulfuric acid plant for the first 1-year operation of this equipment provided all liquid and gas flow data during the start-up and shutdown periods are collected and submitted to the District within 30 days.

Start-up shall be defined as the first 12-hour period of operation of this equipment after sulfur bearing feeds have been introduced to the furnace, D1.

The shutdown shall be defined as the last 12-hour period of operation of this equipment before the compressor, D9, stops operation.

*[**RULE 2005, 5-6-2005; RULE 2011, 5-6-2005**]*

[Devices subject to this condition: C149]

D12.3 The operator shall install and maintain a(n) flow meter to accurately indicate the liquid flow rate in the stripper.

*[**RULE 2005, 5-6-2005; RULE 2011, 5-6-2005**]*

[Devices subject to this condition: C149]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

SO_2 concentration (***by volume on a dry basis,*** 3-hour arithmetic average)

The CEMS shall be installed at the vertical straight duct on the suction side of the main gas blower, and shall sample in accordance with the requirements of the facility's EPA-approved Alternative Monitoring Plan.

The SO_2 concentration shall be used to demonstrate compliance with Condition S42.1.

The operator shall take all steps necessary to avoid CEMS breakdowns and minimize CEMS downtime. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs of the equipment.

The CEMS shall be in operation during which sulfur or sulfur-bearing compounds, excluding conventional fossil fuels such as natural gas or fuel oil, are being fed to the device D1, except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments).

The CEMS shall be operated and maintained in accordance with the applicable quality assurance procedures required by 40 CFR Part 60 Appendix F and SCAQMD Rule 2011 Appendix A.

For every hour of invalid data, missing data must be substituted following the procedures in District Rule 2011, Appendix A, Chapter 2, Section E – Missing Data Procedures.

[**RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; **CONSENT DECREE CIVIL NO. 2:07CV134WL, 7-23-2007**]

[Devices subject to this condition: D9]

D82.3 The operator shall install and maintain a CEMS to measure the following parameters:

SO_2 concentration (***by volume on a dry basis,*** 3-hour arithmetic average)

The SO2 concentration shall be used to demonstrate compliance with Condition S42.1.

The Operator shall sample stack emissions in accordance with the requirements of the facility's EPA-approved Alternative Monitoring Plan.

The operator shall take all steps necessary to avoid CEMS breakdowns and minimize CEMS downtime. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs of the equipment.

The CEMS shall be in operation during which sulfur or sulfur-bearing compounds, excluding conventional fossil fuels such as natural gas or fuel oil, are being fed to the device D1, except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments).

The CEMS shall be operated and maintained in accordance with the applicable quality assurance procedures required by 40 CFR Part 60 Appendix F and SCAQMD Rule 2011 Appendix A.

For every hour of invalid data, missing data must be substituted following the procedures in District Rule 2011, Appendix A, Chapter 2, Section E – Missing Data Procedures.

[**RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; **CONSENT DECREE CIVIL NO. 2:07CV134WL, 7-23-2007**]

[Devices subject to this condition: ~~**S17**~~ ***S151***]

E57.3 The operator shall vent this equipment to the sulfuric acid plant no. 4 whenever this equipment is in operation.

*[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]*

[Devices subject to this condition: C149]

H23.2 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1155

[RULE 1155, 12-4-2009]

[Devices subject to this condition: C54, C146, ***C148***]